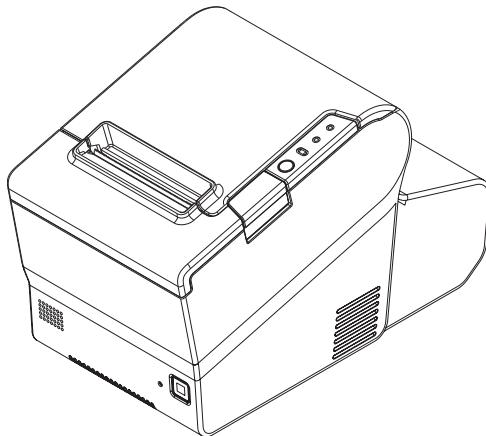


**EPSON®**  
EXCEED YOUR VISION

# TM-T88V-DT

## User's Manual



## **EMC and Safety Standards Applied**

The following standards are applied only to the printers that are so labeled. (EMC is tested using the Epson power supplies.)

Product Name: TM-T88V-DT

The following standard is applied only to the units that are so labeled.

### **WARNING**

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

The connection of a non-shielded interface cable to this device will invalidate the EMC standards of this device. You are cautioned that changes or modifications not expressly approved by Seiko Epson Corporation could void your authority to operate the equipment.

### **FCC Compliance Statement For American Users**

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

### **For Canadian Users**

This Class A digital apparatus complies with Canadian ICES-003.

### **À l'intention des utilisateurs canadiens**

Cet appareil numérique de classe A est conforme à la norme canadienne NMB-003.

### **Caution**

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Seiko Epson Corporation shall not be liable against any damages or problems arising from the use of any options or any consumable products other than those designated as Original Epson Products or Epson Approved Products by Seiko Epson Corporation.

Depending on the area, the interface cable may be included with the product. If so, use that cable.

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## **Precaution on MICROSOFT SOFTWARE LICENSE TERMS**

Be sure to read "MICROSOFT SOFTWARE LICENSE TERMS" at the back of this manual before you start using the product. If you do not accept any one of the terms, do not use the product.

## **Important Safety Information**

This section presents important information intended to ensure safe and effective use of this product. Read this section carefully and store it in an accessible location.

### **Key to Symbols**

The symbols in this manual are identified by their level of importance, as defined below. Read the following carefully before handling the product.

#### **⚠ WARNING:**

*Warnings must be observed carefully to avoid serious bodily injury.*

#### **⚠ CAUTION:**

*Cautions must be observed to avoid minor injury to yourself, damage to your equipment, or loss of data.*

#### **Note:**

*Notes have important information and useful tips on the operation of your product.*

## **Safety Precautions**

#### **⚠ WARNINGS:**

*Turn off the TM-T88V-DT immediately and unplug the AC cable if the TM-T88V-DT produces smoke, a strange odor, or unusual noise. Continued use may lead to fire or electric shock. Contact your dealer or an Epson service center for advice. Never attempt to repair this product yourself. Improper repair work can be dangerous.*

*Never disassemble or modify this product. Tampering with this product may result in injury, fire, or electric shock.*

*Never insert or disconnect the power plug with wet hands. Doing so may result in severe shock.*

*Be sure to use the specified power source, EPSON AC adapter, T (model: M284A). Connection to an improper power source may cause fire.*

*Do not allow foreign objects to fall into this product. Penetration by foreign objects may lead to fire or shock.*

*If water or other liquid spills into this product, turn off the TM-T88V-DT, unplug the AC cable of the TM-T88V-DT immediately, and then contact your dealer or an Epson service center for advice. Continued use may lead to fire or shock.*

*Do not place multiple loads on the power outlet (wall outlet). Overloading the outlet may lead to fire.*

*The equipment must be installed near the power outlet, and the outlet must be easily accessible in case of emergency.*

*Be sure that your AC cable meets the relevant safety standards and includes a power system ground terminal (PE terminal).*

Handle the AC cable with care. Improper handling of the AC cable may cause fire hazard or electric shock.

- Do not modify or attempt to repair the cable.
- Do not place any heavy object on top of the cable.
- Avoid excessive bending, twisting, and pulling of the cable.
- Do not place the cable near heating equipment.
- Check that the plug is clean before plugging it in.
- Be sure to push the prongs all the way in.
- Do not use a damaged cable.

Regularly remove the power plug from the outlet and clean the base of the prongs and between the prongs. If you leave the power plug in the outlet for a long time, dust may collect on the base of the prongs, causing a short and fire.

Do not attempt to open or disassemble the internal lithium battery. This could result in burns or release of hazardous chemicals.

Do not charge or leave the internal lithium battery in a hot place such as near a fire or on a heater because it could overheat and ignite.

Do not block the openings of this product. The product overheats and fire may result.

- Do not place the product in an unventilated narrow location, such as a bookshelf.
- Do not place the product on carpet or bedding.
- Do not cover the product with a blanket or tablecloth.

Do not connect a telephone line to the drawer-kick connector of the printer. The telephone line or printer may become damaged.

Do not use aerosol sprayers containing flammable gas inside or around this product. Doing so may cause fire.

## CAUTIONS:

### Main body

If you turn off the TM-T88V-DT, wait more than 10 seconds before you turn it on again. If the TM-T88V-DT is turned on without an interval, it may not start up normally.

Do not connect the unit to power outlets that are close to devices that generate voltage fluctuations or electrical noise. In particular, stay clear of devices that use large electric motors. Otherwise, the TM-T88V-DT may malfunction.

Do not use this product with any voltage other than the specified one. Doing so may lead to fire.

Always connect the AC cable to the AC inlet of the AC adapter,T before plugging it into the power outlet.

Be sure to push the plug of the AC cable all the way into the AC inlet of the AC adapter,T.

Always unplug the AC cable from the power outlet before unplugging it from the AC inlet of the AC adapter,T.

When disconnecting the AC cable, hold the plug firmly. Do not tug on the cable itself.

Do not connect the cables in ways other than those specified in this manual. Different connections may cause equipment damage or fire.

Make sure that the total power requirements of all devices receiving power from this product do not exceed the power limitation. Otherwise, the product may become damaged. See the Specifications of the TM-T88V-DT Technical Reference Guide for detailed information on the power capacity of the product.

*Be sure to use this product with the connector cover attached. If it is not attached, foreign objects may enter this product, causing fire or equipment damage.*

*Do not use the product in locations subject to high humidity or dust levels. Excessive humidity and dust may cause paper jams and other problems, such as fire, or electric shock.*

*Do not use the product where inflammable fumes of gasoline, benzine, thinner, or other inflammable liquids may be in the air. Doing so may cause an explosion or fire.*

*Be careful when transporting, opening, and incinerating the package. You may cut your finger on the edge of the cardboard.*

*Be sure to set this product on a firm, stable, horizontal surface. The product may break or cause injury if it falls.*

*Never clean the product with alcohol, benzine, thinner, or other such solvent. Doing so may damage or break parts made of plastic or rubber.*

*To ensure safety, unplug this product before leaving it for an extended period.*

*Do not stand on or place heavy objects on top of this product. Equipment may fall or collapse, causing breakage and possible injury.*

*The print head can be very hot during and immediately after printing. If you need to touch it, wait until it cools down. Touching it before that may cause burns.*

*Be careful of the autocutter blade of the printer.*

*Connecting an outdoor overhead LAN cable directly to your product may lead to lightning damage. If you need to connect such a cable to your product, the cable must be protected against an electrical surge between the cable and your product. You should avoid connecting your product to a non-surge protected outdoor overhead LAN cable.*

**Optional customer display**

*Do not use excessive force to rotate the customer display or to change the angle of it. Doing so may break the customer display or the support.*

## **Caution Labels**

The caution labels on the product indicate the following precautions.

 **CAUTION:**

*Do not touch the thermal head and the frame on its side because it can be very hot after printing.*

 **CAUTION:**

*Touching the manual cutter may cause injury.*

## **Restriction of Use**

When this product is used for applications requiring high reliability/safety, such as transportation devices related to aviation, rail, marine, automotive, etc.; disaster prevention devices; various safety devices, etc.; or functional/precision devices, etc.; you should use this product only after giving consideration to including fail-safes and redundancies into your design to maintain safety and total system reliability. Because this product was not intended for use in applications requiring extremely high reliability/safety, such as aerospace equipment, main communication equipment, nuclear power control equipment, or medical equipment related to direct medical care, etc., please make your own judgment on this product's suitability after a full evaluation.

## **Recycling the Batteries**

The batteries must be recycled or disposed of properly. The lithium-ion battery is recyclable. At the end of its useful life, under various state and local laws, it is illegal to dispose of this battery into your municipal waste stream. Please call 1-800-8-BATTERY for information on how to recycle this battery.



## **Unpacking**

The following items are included with the standard specification printer. If any item is damaged, contact your dealer.

- |  |   |
|--|---|
| <input type="checkbox"/> Printer                                   | <input type="checkbox"/> Connector cover                |
| <input type="checkbox"/> AC adapter,T (Model: M284A)* <sup>1</sup> | <input type="checkbox"/> Recovery Disc                  |
| <input type="checkbox"/> AC cable* <sup>2</sup>                    | <input type="checkbox"/> Roll paper guide* <sup>3</sup> |
| <input type="checkbox"/> Screw* <sup>3</sup>                       | <input type="checkbox"/> Roll paper* <sup>4</sup>       |
| <input type="checkbox"/> User's Manual (this manual)               |   |

\*1 *The green identification tape on the cable of the AC adapter is for distinguishing the AC adapter,T from another AC adapter in connection with another product. The tape has no meaning for the TM-T88V-DT.*

\*2 *The shape varies between models and areas.*

\*3 *May not be included, depending on the printer model.*

\*4 *The paper width depends on the printer model.*

## **Downloading Drivers, Utilities, and Manuals**

The latest versions of drivers, utilities, and manuals can be downloaded from one of the following URLs.

For customers in North America, go to the following web site:  
<http://www.epsonexpert.com/> and follow the on-screen instructions.

For customers in other countries, go to the following web site:  
<http://download.epson-biz.com/?service=pos>

## **Downloading the Latest Version of the Software**

To recover the software installed in the product, use the recovery disc that came with the product. For the recovery procedure, see the TM-T88V-DT Technical Reference Guide.

The software may have been updated after shipping; therefore, after the recovery, it is recommended to update the software to the latest version. For obtaining the latest version of the software, check the following URL.

<http://pos.epson.com/developers/>

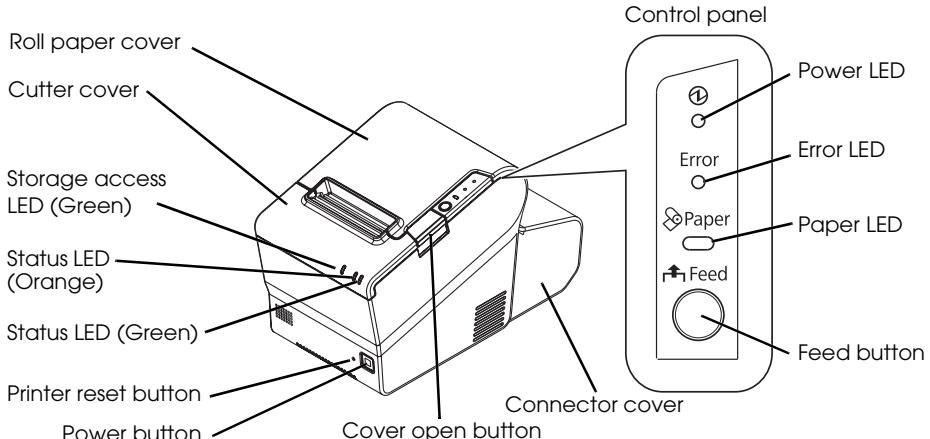
## **Installing the Product**

You can install the product only horizontally.

## **Installing Applications**

To install commercially available applications, consult your dealer.

## Part Names



## Control Panel

The control panel has the (power) LED, Error LED, Paper LED, and Feed button.

## LED Indicators

The main body also has 3 LED indicators (Storage access LED (green), Status LED (orange), and Status LED (green)). Each LED indicator on the control panel and main body indicates the following.

LED	Color and status		Meaning
Power	On in green		Power is on.
	Off		Power is off.
Error	On in orange		Offline.*
	Flashing in orange		An error has occurred.
	Off		In normal operation.
Paper	On in orange		Roll paper near-end.
Paper	Flashing in orange		Waiting for self-test printing to be continued or in macro execution ready state.
	Off		Paper is adequate.
Storage access	On in green		Access to storage.
Status	Green	Orange	
	On	Flashing (with approx. 1 s intervals)	Booting.
	On	Off	In normal operation.
	Flashing (with approx. 1 s intervals)	Off	Standby.
	Off	Off	Power is off.
	On	Flashing (with approx. 160 ms intervals)	CPU is high in temperature.

\*Excluding during paper feed using the Feed button, a self-test, and an error state)

## Feed button

This feeds the paper.

## **Connecting External Devices and the AC Adapter**

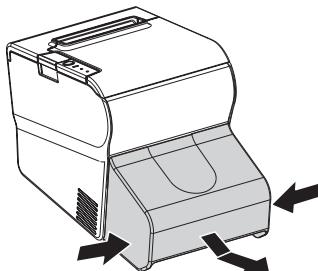
### **Removing the Connector Cover**

#### **⚠ CAUTION:**

*Be sure to push the lower part of both sides of the connector cover inward when attaching/removing it, or the connector cover may become damaged.*

To connect external devices, first remove the connector cover, following the steps below:

Push the connector cover down while pushing the lower part of the both sides of it inward to detach the hooks from the printer case.



## **Connecting External Devices and the AC Adapter**

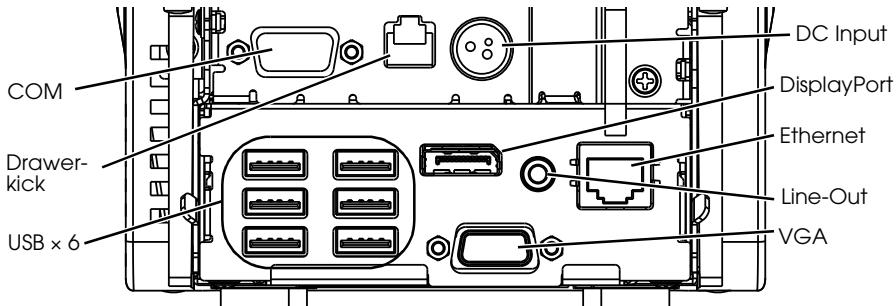
#### **⚠ CAUTION:**

*Be sure to use the specified AC adapter (AC adapter,T (Model: M284A)). Connection to an improper power source may cause fire or shock.*

#### **Note:**

*The green identification tape on the cable of the AC adapter is for distinguishing the AC adapter,T from another AC adapter in connection with another product. The tape has no meaning for the TM-T88V-DT.*

1. Make sure the product is turned off.
2. Connect each interface cable to the connectors on the back of the product. For the position and shape of each connector, see the illustration below.



3. Connect the AC cable to the AC adapter.

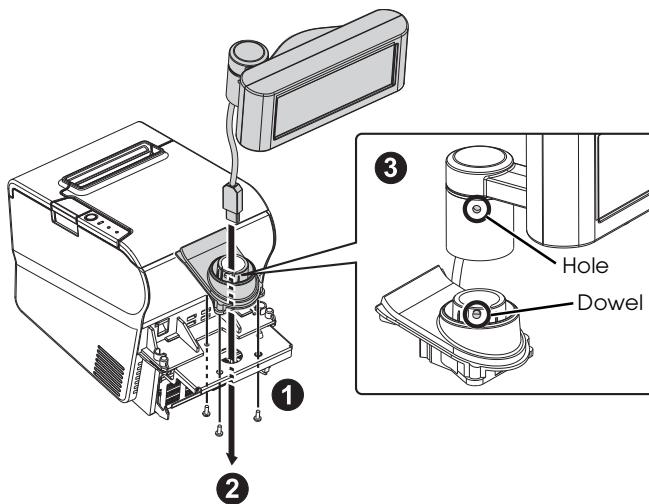
4. Connect the DC cable of the AC adapter to the power supply connector on the product.
5. Insert the AC cable plug into a power outlet.

## Attaching the Optional Customer Display

If you use the product with the optional customer display, follow the steps below to attach customer display. If you use the product without the customer display, skip this section and go to "Attaching the Connector Cover."

### When using the L-shaped pole

1. Attach the base with the main body, and secure the base with the 3 screws. (The base and the screws are included in the customer display package.) See ① in the illustration below.
2. Pass the USB cable through the cable hole. See ② in the illustration below.
3. Align the dowel hole inside the pole and the dowel on the base, and attach the pole with the base. See ③ in the illustration below.
4. Connect the USB cable with one of the USB connectors.



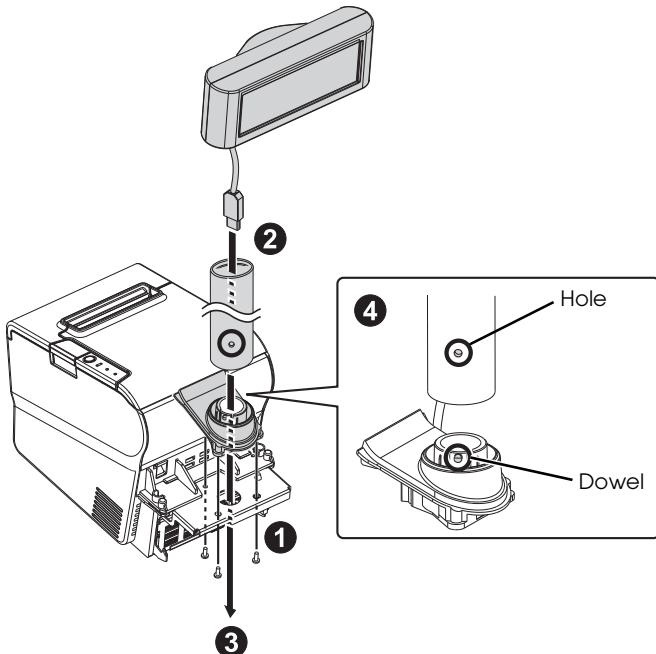
### When using the Straight pole



*The straight pole does not come out of the display once it is attached to it. Be sure of its orientation when attaching it to the display.*

1. Attach the base with the main body, and secure the base with the 3 screws. (The base and the screws are included in the customer display package.) See ① in the illustration below.
2. With the end of the straight pole with a hole pointing downward, pass the USB cable through the pole. See ② in the illustration below.
3. Attach the pole with the display.
4. Pass the USB cable through the cable hole. See ③ in the illustration below.

5. Align the dowel hole inside the pole and the dowel on the base, and attach the pole with the base. See ④ in the illustration below.
6. Connect the USB cable with one of the USB connectors.



## Attaching the Connector Cover

To protect the cables, attach the connector cover in the steps below. When the optional customer display unit is not installed, attach the connector cover with the U-shaped part.

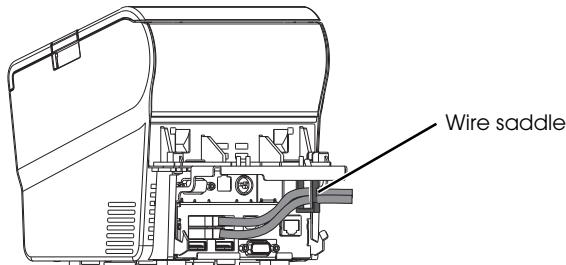
### **⚠ CAUTION:**

*Be sure to hold both sides of the customer display cover when attaching it, or the connector cover may become damaged.*

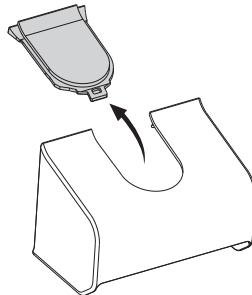
### **Note:**

*When pulling out the cables whose connectors do not lock themselves (USB cables and Line-Out cable) from the cable exits on the back, fix the cables with the wire saddle to prevent the cables from coming off.*

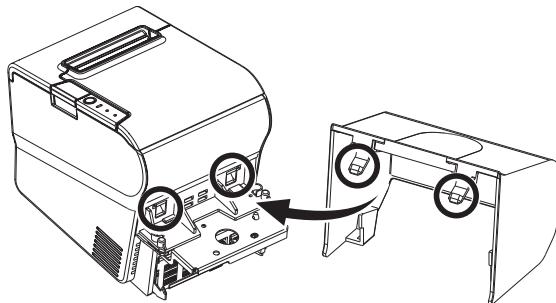
1. Pass the interface cables through the wire saddle on the pole mounting plate.



2. Pass each cable through the cable exits at the bottom of the connector cover.
3. If you use the product with the optional customer display, remove the U-shaped part from the connector cover as shown in the illustration below. If you use the product without the optional customer display, keep the U-shaped part attached.



4. Align the tabs on the upper side of the connector cover with the notches on the main body, and push the front part of it to click onto the printer cover.
5. Hold the lower part of the connector cover, align the tabs on the upper side of it with the notches on the main body as shown in the illustration below, and push the front part of connector cover to attach it.



6. Turn over the main body back on its bottom, and make sure the cables are not pinched.

## **Turning On/Off the TM-T88V-DT**

Use the power button (See the illustration of "Part Names" on page 7.) to turn on/off the TM-T88V-DT. You can also turn on the TM-T88V-DT through the network.

The operating system of the TM-T88V-DT has a standby mode. The system can be set so that the standby mode can be turned on and off with the power switch. If you turn the unit off, wait more than 10 seconds before you turn it on again.



*Assign the functions to the power button through the operating system or BIOS.*

## **Forced Termination**

If you cannot turn the TM-T88V-DT off using applications or the operating system, you can execute forced termination as a last resort. Keep pressing the power switch for approximately 4 seconds until the TM-T88V-DT is turned off. Be careful; when forced termination is executed, all unsaved data is lost.

## **Printer Reset Button**

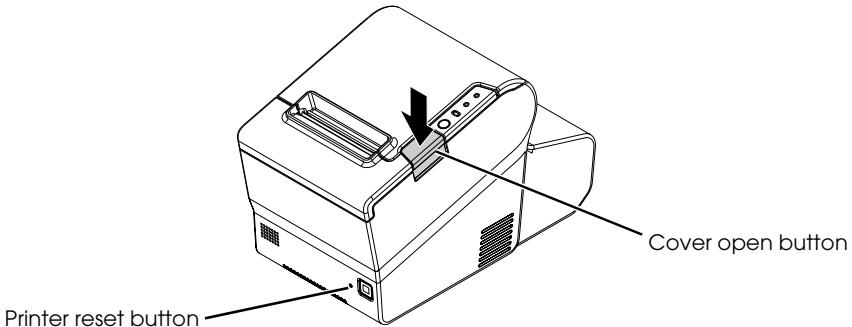
Press this button (See the illustration below.) with a pointed object (such as a pen) to reset the printer unit.

## **Printer Operation**

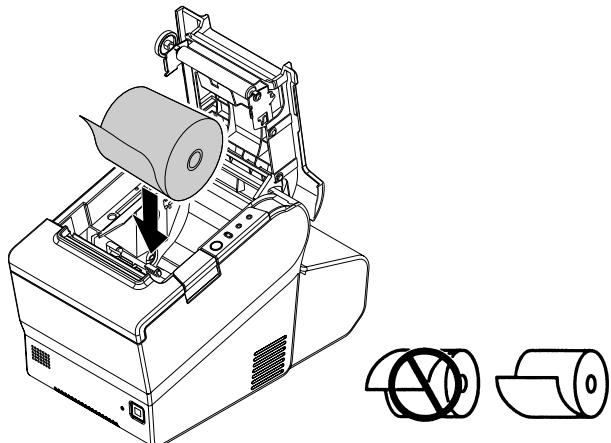
### **Installing the Roll Paper**

Follow the steps below to install the roll paper. If you want to change the paper width by using the roll paper guide, see "Changing the Paper Width" on page 14.

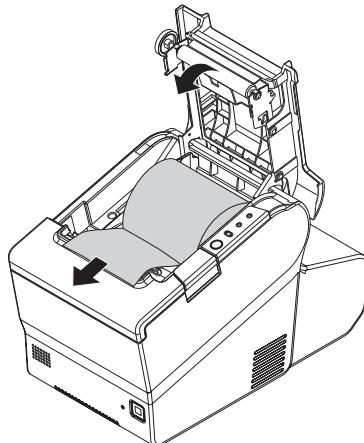
1. Press the cover open button to open the roll paper cover.



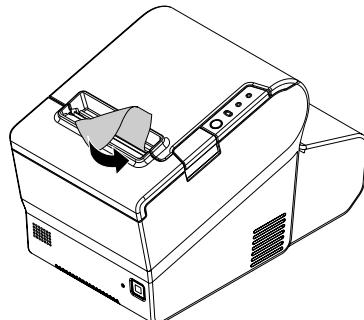
2. Remove the used roll paper core if any, and insert the roll paper. The illustration below shows the correct direction of the paper.



3. Pull out some paper, and close the roll paper cover as shown in the illustration below.



4. Tear off the paper as shown in the illustration below.



## Feeding Paper

Press the Feed button (See the illustration of "Part Names" on page 7.) to feed the paper.

## Changing the Paper Width

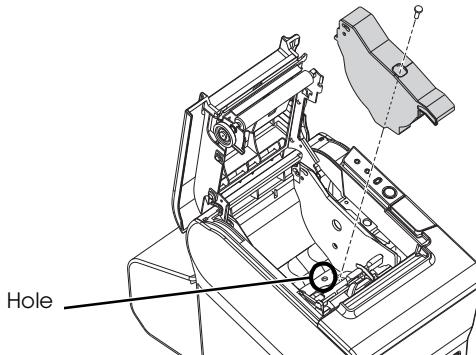
If a roll paper guide is included with your printer, you can change the paper width from 80 mm to 58 mm by installing the roll paper guide. Follow the steps below to change the paper width.

### CAUTION:

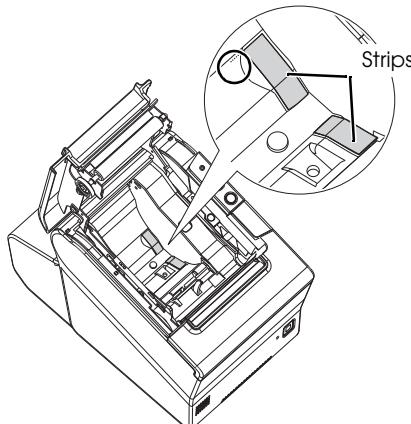
*If you once change the paper width from 80 mm to 58 mm, you cannot change it back to 80 mm.*

*You can change the paper width either on the TM-T88V-DT or through the Network, using the TM-T88V utility.*

1. Secure the roll paper guide to the hole with the enclosed screw as shown in the illustration below.



2. Paste the enclosed 2 strips along the roll paper guide on the bottom of the roll paper holder. Make sure the space between the top edge of strip and the groove in the roll paper guide (indicated in the circle in the illustration below) is 0.5 mm or less.



3. Install the roll paper correctly.
4. Close the roll paper cover.

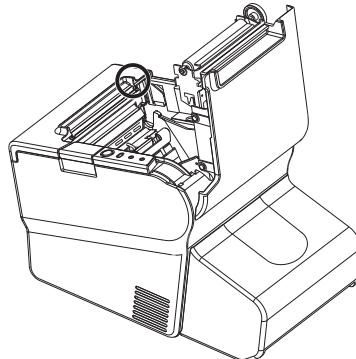
## Removing the Jammed Paper

When a paper jam occurs, never pull out the paper forcibly. Open the roll paper cover and remove the jammed paper.



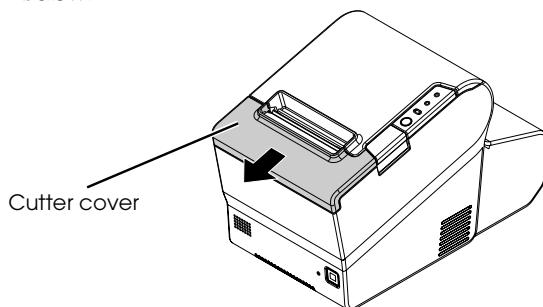
### CAUTION:

*Do not touch the thermal head and the frame on its side (indicated in the circle in the illustration below) because it can be very hot after printing.*



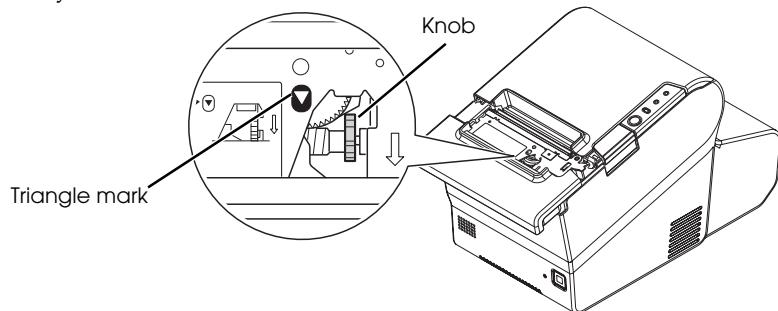
If the roll paper cover does not open, follow the steps below.

1. Turn off the printer.
2. Slide the cutter cover toward the front to open it as shown in the illustration below.



Cutter cover

3. Turn the knob until you see a triangle mark in the opening. This returns the cutter blade to the normal position. There is a label near the cutter to assist you.



4. Close the cutter cover.
5. Open the roll paper cover and remove the jammed paper.

## Controlling the Speaker Volume

You can control the speaker volume with the speaker volume control on the operating system on the computer.

## Changing the Orientation of the Optional Customer Display

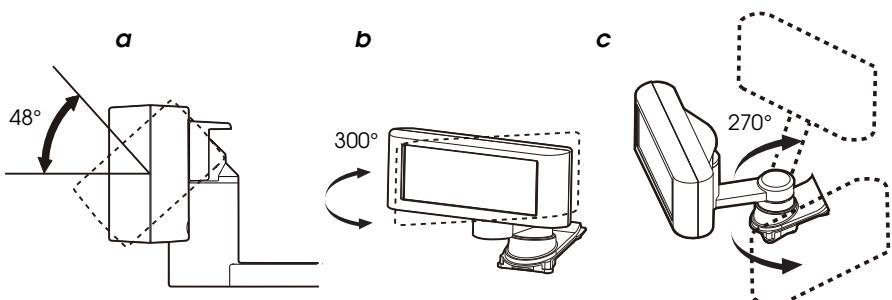
Hold the main body with your hand and move the optional customer display to change the direction or angle. Make sure to move it in their mobile range only.

### **⚠ CAUTION:**

*Do not rotate the customer display with excessive force. Doing so may break the customer display.*

The mobile range of the display is as follows. See the illustration below.

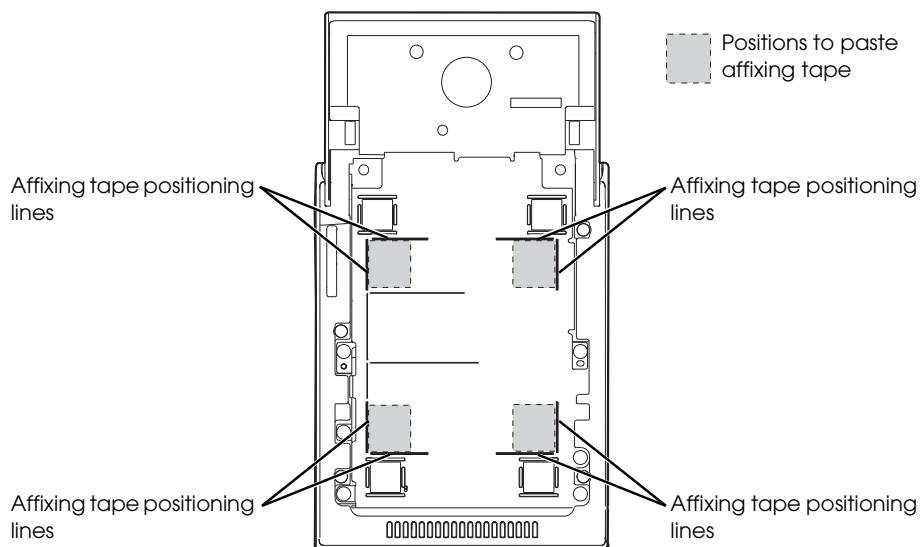
- Display tilt: Maximum angle of 48° (4 levels, 5 positions)
- Display rotation: Maximum angle of 300°
- Arm rotation: Maximum angle of 270° (L-shaped pole only)



## **Securing the Product**

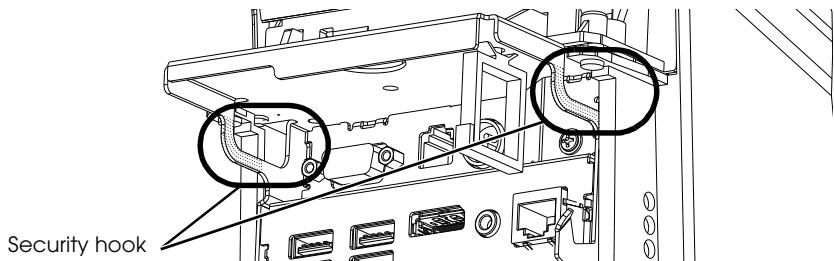
You can secure the product to the installation surface with optional affixing tape (hook and loop fastener, four pairs, Model: DF-10), following the steps below.

1. Prepare four pairs of affixing tape.
2. Turn over the product so that you can see its bottom.
3. With two pieces of the affixing tape combined, peel off the backing paper of a pair on one side, and paste it to one of the specified positions on the bottom of the product. Illustration below shows the positioning lines for pasting the pieces of the affixing tape.
4. In the same way, paste other three pairs of tape in the specified positions.
5. Peel off the backing paper of each pair on the other side of the affixing tape, turn over the product back on its bottom, and place and secure it firmly to the installation surface.



## **Security Hook**

You can attach a commercially available security wire to the security hook.



## Cleaning

### Cleaning the Printer Case

Be sure to turn off the printer, and wipe the dirt off the printer case with a dry cloth or a damp cloth.

#### **⚠ CAUTION:**

Never clean the product with alcohol, benzine, thinner, or other such solvents. Doing so may damage or break the parts made of plastic and rubber.

### Cleaning the Display

Wipe away the dirt with a cloth that is dry or slightly moistened with ethanol or isopropyl alcohol.

### Cleaning the Thermal Head

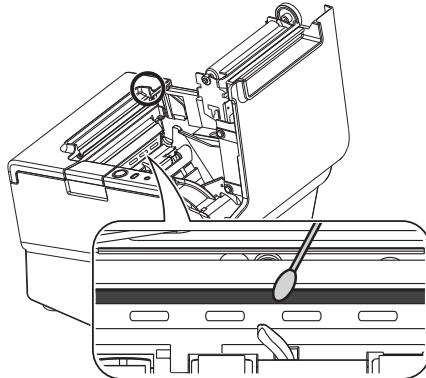
#### **⚠ ⚠ CAUTION:**

After printing, the thermal head and the frame on its side (indicated in the circle in the illustration below) can be very hot. Be careful not to touch it and to let it cool before you clean it.

*Do not damage the thermal head by touching it with your fingers or any hard object.*

Turn off the printer, open the roll paper cover, and clean the thermal elements of the thermal head with a cotton swab moistened with an alcohol solvent (ethanol or IPA), as shown in the illustration.

Epson recommends cleaning the thermal head periodically (generally every 3 months) to maintain receipt print quality.



## **Troubleshooting**

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### **No lights on the control panel**

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Check whether the DC cable and AC cable are correctly connected to the printer and the power outlet.

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### **Error LED on with no printing**

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- Check whether the roll paper cover is closed. If it is open, close it.
  - If the Paper LED is on, check whether the roll paper is correctly installed and any roll paper remains.
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### **Error LED flashing with no printing**

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- Check whether a paper jam has occurred. If the paper is jammed, remove the jammed paper, referring to "Removing Jammed Paper" (page 15) and install the roll paper correctly.
- Printing stops if the head overheats and resumes automatically when it cools.
- For other cases, turn the printer off, and turn it back on after 10 seconds.

## Specifications

Item		Specification
<b>CPU</b>	<b>Available CPU</b>	Intel® Atom™ N2800 (1 MB Cache, 1.86 GHz)
<b>Memory</b>	<b>Main memory</b>	4 GB, DDR3-1066, SO-DIMM slot
	<b>BIOS ROM</b>	SPI Flash 4 MB
<b>Chip set</b>		Intel NM10
<b>Video controller</b>		Built-in CPU
<b>Backing storage*</b>		SATA SSD (16 GB/32 GB)
<b>Interface</b>	<b>Ethernet</b>	10BASE-T/100BASE-TX/1000BASE-T 1port (RJ-45) Support Wake On LAN Network boot
	<b>USB</b>	External: x 6 (Compliance: USB 2.0)
	<b>Serial</b>	x 1 (D-sub 9 pin male)
	<b>VGA</b>	x 1 (D-sub 15 pin female)
	<b>DisplayPort</b>	x 1 (Standard DisplayPort, connector: 20 pin female)
	<b>Drawer</b>	x 1 (RJ12 6 pin)
	<b>Audio functions</b>	Sound can be output to the built-in speaker. External line-out is provided.
<b>RTC/CMOS Backup battery</b>		Lithium secondary battery for RTC backup
<b>Speaker</b>		Built-in monaural speaker
<b>Printer unit</b>	<b>TM-T88V (80 mm)</b>	300 mm/s Thermal receipt printer
<b>Software</b>	<b>BIOS</b>	AMI BIOS (ACPI 2.0/APM 1.2/Plug&Play-ready)
	<b>Operating system</b>	Windows Embedded POSReady7
	<b>Device control software</b>	ePOS-Device USB port controller (thin-client connection supported)
<b>Power supply</b>		Dedicated AC adapter (AC adapter,T (Model: M284A)) DC 24 V, 4.2 A
<b>Current consumption</b>		12.2 W (when not printing)/54.0 w (when printing)
<b>Temperature</b>		Operating: 5 to 40°C {41 to 104°F} Storage: -10 to 50°C {14 to 122°F}
<b>Humidity</b>		Operating: 10 to 90 %RH (No condensation) Storage: 10 to 90 %RH (No condensation)
<b>Overall dimensions</b>		145 x 279 x 183 mm {5.71x 10.98 x 7.2"} (H x W x D) (Base unit only, Rear cover included)
<b>Weight (Mass)</b>		Approx. 2.8 kg {6.16 lb}

\* The storage capacity differs depending on the model.

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- 1) This printer product includes open source software programs listed in Section 5) according to the license terms of each open source software program.
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- 4) OpenSSL toolkit  
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This product includes cryptographic software written by Eric Young (eay@cryptsoft.com).
- 5) The list of open source software programs included with this printer product and the whole license agreements of each license can be found in the following URL.  
<http://xxx.xxx.xxx.xxx/licenses/>  
\* For the underlined part in the above URL, input each printer's IP address.

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- updates,
- supplements,
- Internet-based services, and
- support services

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A POS System means an Embedded System that performs functions substantially similar to that of a point of sale, kiosk (informational or transactional), digital signage, or similar types of devices; and is designed for use solely with a POS Application.

A POS application is a software application which provides any of the following functions;

- process sales and service transactions
- scan and track inventory
- record or transmit customer information
- perform related management functions
- provide information directly and indirectly to customers about available products and services

**b. Other Software.** You may use other programs with the software as long as the other programs

- directly supports the manufacturer's specific use for the device, or
- provide system utilities, resource management, or anti-virus or similar protection.
- Software that provides consumer or business tasks or processes may not be run on the device. This includes email, word processing, spreadsheet,

database, scheduling and personal finance software. The device may use terminal services protocols to access such software running on a server.

- c. **Storage/Network Use.** You may also store or install one (1) copy of the software on a storage device, such as network server, used only to install or run the software on your other POS Systems over an internal network; however, you must acquire and dedicate an additional license for each separate POS System on or from which the software is installed, used, accessed, displayed or run. Except as otherwise permitted by Remote Assistance features described above, a license for the software may not be shared or used concurrently on different POS Systems.

- d. **Device Connections.** You may use terminal services protocols to connect the device to a server running business task or processes software such as email, word processing, scheduling or spreadsheets.

You may permit a maximum of twenty (20) computers or other electronic devices (each a "Device") to connect via Server Message Bloc (SMB) to the POS System to utilize one or more of the following services of the software: File Services, Print Services, Internet Information Services, Internet Connection Sharing and telephony services. The twenty connection maximum includes any indirect connections made through "multiplexing" or other software or hardware which pools or aggregates connections. Unlimited inbound connections are allowed via TCP/IP (Transmission Control Protocol ("TCP") and the Internet Protocol ("IP").

- e. **Remote Desktop/Remote Assistance.** The software may contain Remote Assistance and Remote Desktop technologies that enable the software or other applications installed on the POS System to be used remotely between two or more computing devices, even if the software or application is installed on only one POS System. You may use Remote Assistance and Remote Desktop with all Microsoft products; provided however, use of these technologies with certain Microsoft products may require an additional license. For both Microsoft products and non-Microsoft products you should consult the license agreement accompanying the applicable product or contact the applicable licensor to determine whether use of Remote Assistance or Remote Desktop is permitted without an additional license.

- f. **Font Components.** While the software is running, you may use its fonts to display and print content. You may only
- embed fonts in content as permitted by the embedding restrictions in the fonts; and
  - temporarily download them to a printer or other output device to print content.

- g. **Icons, images and sounds.** While the software is running, you may use but not share its icons, images, sounds, and media.

- h. **VHD BOOT.** Additional copies of the software created using the software's Virtual Hard Disk functionality ("VHD Image") may be pre-installed on the physical hard disk of the device. These VHD Images may only be used for maintaining or updating the software installed on the physical hard disk or drive. If the VHD Image is the only software on your device, it may be used as the primary operating system but all other copies of the VHD Image may only be used for maintenance and updating.

- i. **Multiplexing.** Hardware or software you use to
- pool connections,
  - reroute information, or
  - reduce the number of devices or users that directly access or use the software

(sometimes referred to as "multiplexing" or "pooling"), does not reduce the number of licenses of any type that you need.

- 3. INTERNET-BASED SERVICES.** Microsoft provides Internet-based services with the software. It may change or cancel them at any time.

- a. **Consent for Internet-Based Services.** The software features described below connect to Microsoft or service provider computer systems over the Internet. In some cases, you will not receive a separate notice when they connect. You may switch off these features or not use them. For more information about these features, see <http://windows.microsoft.com/en-US/windows7/windows-7-privacy-statement-highlights>. **By using these features, you consent to the transmission of this information.** Microsoft does not use the information to identify or contact you.

Computer Information. The following features use Internet protocols, which send to the appropriate systems computer information, such as your Internet protocol address, the type of operating system, browser and name and version of the software you are using, and the language code of the device where you installed the software. Microsoft uses this information to make the Internet-based services available to you.

- Auto Root Update. The Auto Root Update feature updates the list of trusted certificate authorities. You can switch off the Auto Root Update feature.
- Digital Certificates. The software uses digital certificates. These digital certificates confirm the identity of Internet users sending X.509 standard encrypted information. They also can be used to digitally sign files and macros to verify the integrity and origin of the file contents. The software retrieves certificates and updates certificate revocation lists using the Internet, when available.
- IPv6 Network Address Translation (NAT) Traversal service (Teredo). This feature helps existing home Internet gateway devices transition to IPv6. IPv6 is next generation Internet protocol. It helps enable end-to-end connectivity often needed by peer-to-peer applications. To do so, each time you start up the software the Teredo client service will attempt to locate a public Teredo Internet service. It does so by sending a query over the Internet. This query only transfers standard Domain Name Service information to determine if your computer is connected to the Internet and can locate a public Teredo service. If you
  - use an application that needs IPv6 connectivity or
  - configure your firewall to always enable IPv6 connectivityby default standard Internet Protocol information will be sent to the Teredo service at Microsoft at regular intervals. No other information is sent to Microsoft. You can change this default to use non-Microsoft servers. You can also switch off this feature using a command line utility named "netsh."

- Information Rights Management. The software contains a feature that allows you to create content that cannot be printed, copied or sent to others without your permission. You may need to connect to Microsoft to use this feature for the first time. Once a year, you may need to re-connect to Microsoft to update it. For more information, go to [www.office.microsoft.com/en-us/assistance/HA010397891033.aspx](http://www.office.microsoft.com/en-us/assistance/HA010397891033.aspx). You may choose not to use this feature.

- Windows Media Digital Rights Management. Content owners use Windows Media digital rights management technology (WMDRM) to protect their intellectual property, including copyrights. This software and third party software use WMDRM to play and copy WMDRM-protected content. If the software fails to protect the content, content owners may ask Microsoft to revoke the software's ability to use WMDRM to play or copy protected content. Revocation does not affect other content. When you download licenses for protected content, you agree that Microsoft may include a revocation list with the licenses. Content owners may require you to upgrade WMDRM to access their content. Microsoft software that includes WMDRM will ask for your consent prior to the upgrade. If you decline an upgrade, you will not be able to

access content that requires the upgrade. You may switch off WMDRM features that access the Internet. When these features are off, you can still play content for which you have a valid license.

- Windows Media Player. When you use Windows Media Player, it checks with Microsoft for
  - compatible online music services in your region;
  - new versions of the player; and
  - codecs if your computer does not have the correct ones for playing content.

You can switch off this last feature. For more information, go to [go.microsoft.com/fwlink/?LinkId=51331](http://go.microsoft.com/fwlink/?LinkId=51331).

- Windows (or Microsoft) Update Feature. Windows Update Feature. This is an optional feature that you can enable by selecting the "Opt In" dialogue box. Once enabled, this feature automatically connects to Microsoft or service provider computer systems over the internet to provide updates from Microsoft to your software and Runtime. In some cases, you will not receive a separate notice when they connect. Standard information about your computer is sent each time the feature connects. Standard computer information may include your Internet Protocol address, the type of operating system, browser and name and version of the software you are using and the language code of the device where you installed the software. Microsoft uses this information to make the Internet based service available to you. You may switch off this feature or not use it. By using this feature, you consent to the transmission of this information. Microsoft does not use the information to identify or contact you.

4. **BENCHMARK TESTING.** You must obtain Microsoft's prior written approval to disclose to a third party the results of any benchmark test of the software. However, this does not apply to the Microsoft .NET Framework (see below).
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